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| 10/692,936 | 10/24/2003 | Tetsuya Akiyama | 10873.1336US01 | 2117 |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/692,936 | AKIYAMA ET AL. | |
| | Examiner | Art Unit | |
| | LaTanya Bibbins | 2627 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *30 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

*1.* In the remarks filed on July 30, 2007, Applicant submitted arguments for allowability of pending claims 1-29.

### *Response to Arguments*

*2.* Applicant's arguments filed July 30, 2007 have been fully considered but they are not persuasive.

**Regarding claims 1-19 and 22-29,** Applicant argues that Nakano does not teach or suggest the correction information recording portion that stores correction information on at least any one of the recording layers of the optical information recording medium. Applicant also argues that Nakano fails to teach or suggest storing correction information for correcting a laser beam intensity based on a change in transmittance of the second to Nth recording layers between an unrecorded state and a recorded state onto the optical recording medium.

However, Nakano is drawn to an optical information recording medium, recording method and recording apparatus where power of a recording laser beam is controlled when quantity of the transmitting beam is changed depending on recording states of information recording layers when recording on a second or deeper recording layer of a medium having a plurality of layers (see the abstract and paragraph [0010]). Nakano also discusses obtaining optimum power values (i.e. correction information for correcting a laser beam intensity) and storing the values into a buffer. In addition, Nakano teaches a lead-in area where maker-recommended recording power is stored.

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Nakano and have at least any one of the first to Nth recording layers comprise a correction information recording portion, as suggested by Nakano, since it is common practice in the art to provide accessible recording and reproduction parameters in a region within the optical medium.

*3.* **Regarding claims 20 and 21,** Applicant argues that Heemskerk is silent about determining a pulse condition and further that there is no motivation to modify Heemskerk with Nakano.

In response to Applicant's argument that Heemskerk is silent about determining a pulse condition, Examiner notes that the Office Action states that Heemskerk fails to disclose determining a pulse condition. However, the Office Action further notes that paragraphs [0093]-[0095] of Nakano does in fact disclose determining a pulse condition by a test recording only for the recording layers in the order later than the recording layer corresponding to the recorded recording layer and further provides a motivation for combining the Heemskerk and Nakano references.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, the motivation for combining the references is found in paragraph [0022] of the Nakano reference, as noted in the Office Action. Specifically, one of ordinary skill in the art at the time of the invention would have been motivated to combine the teachings of Heemskerk and Nakono in order to control the power of the laser beam such that recording is performed with optimum recording power.

***Claim Rejections - 35 USC § 103***

***4.*** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

***5. Claims 1-3, 5-9, 12-19, and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano (US 2002/0136122).***

**Regarding claims 1, 12 and 22,** Nakano discloses a method, apparatus and an optical information recording medium comprising: first to Nth recording layers (where N is an integer equal to or larger than 2) arranged sequentially from an opposite side of an incident side of a laser beam, the laser beam that has entered from one side being irradiated onto any one of the first to Nth recording layers, thereby recording and reproducing information ([0043], Lines 1-4; [0050]);

correction information recording position containing a correction information for correcting a laser beam intensity based on a change in a transmittance of the second to

Nth recording layers between an unrecorded state and a recorded state ([0056]-[0058]; memory, [0059], Lines 7-9);.

a control portion for determining a pulse condition for recording user data using the correction information stored in the correct on information storing portion (control unit, [0043]); and

a pulse condition setting portion for controlling the laser beam using the pulse condition determined in the control portion (control unit, [0043]).

However, Nakano does not explicitly disclose at least .any one of the first to Nth recording layers comprises a correction information recording portion, but does disclose a lead-in area wherein maker-recommended recording power is stored ([0108] Lines 2-4).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Nakano and have at least any one of the first to Nth recording layers comprise a correction information recording portion, as suggested by Nakano, since it is common practice in the art to provide accessible recording and reproduction parameters in a region within the optical medium.

**Regarding claim 2,** Nakano discloses at least any one of the first to Nth recording layers comprises a lead-in region exclusively for reproduction, and the correction information recording portion is provided in the lead-in region ([0108], Lines 1-6).

**Regarding claims 3, 13 and 23,** Nakano discloses the optical information recording medium has a disc shape (see Fig. 4), the first to Nth recording layers

comprise at least a test recording region for performing a test recording and an information recording region for recording user data ([0021], Lines 1-6), and

the test recording region of a Kth recording layer (where K is any integer satisfying $1 \leq K \leq N-1$) is arranged at a radial position different from the test recording region and the information recording region of the (K + 1)th to Nth recording layers ([0021], Lines.5-8).

**Regarding claims 5 and 16,** Nakano discloses the correction information is a correction coefficient determined by a transmittance T1 in the unrecorded state and a transmittance T2 in the recorded state in the second to Nth recording layers ([0056]-[0058]).

**Regarding claim 6,** Nakano discloses the correction information is a correction coefficient (reference optimum power, [0043] and [0063]), and the correction coefficient is set so that a quality of a reproduced signal of the information recorded in a Kth recording layer (where K is any integer satisfying $1 \leq K \leq N-1$) using a corrected laser beam corrected with the correction coefficient satisfies a predetermined criterion in the case where at least any of the (K + 1)th to Nth recording layers arranged closer to the laser beam incident side with respect to the Kth recording layer is in the unrecorded state ([0062]-[0063]; [0074]).

**Regarding claim 7,** Nakano discloses the correction information is transmittance variation information of each of the second to Nth recording layers, for indicating whether the transmittance lowers or rises by recording the information ([0056]-[0058]).

**Regarding claim 8,** Nakano discloses the correction information recording portion further contains a target recording layer information for specifying a recording layer in which user data are to be recorded using the laser beam corrected with the correction information, in addition to the correction information ([0065], Lines 1-7).

**Regarding claim 9,** Nakano discloses the correction information recording portion further contains a recording layer specifying, information for specifying any of the recording layers arranged closer to the laser beam incident side with respect to the target recording layer, in addition to the correction information and the target recording layer information ([0051], [0056] and [0059]).

**Regarding claims 14 and 24,** Nakano discloses the correction information is a correction coefficient, and the correction coefficient is set so that a quality of a reproduced signal of the information recorded in the Kth recording layer using a corrected laser beam corrected with the correction coefficient satisfies a predetermined criterion in the case where at least any one of the (K + 1 )th to Nth recording layers arranged closer to the laser beam incident side with respect to the Kth recording layer is in the unrecorded state ([0062]-[0063]; [0074]), and when recording the information in the Kth recording layer, the pulse condition including the laser beam intensity is determined using the correction coefficient ([0110], Lines 10-13).

**Regarding claims 15 and 28,** Nakano discloses the quality of the reproduced signal is evaluated by measuring a jitter value of the reproduced signal ([0110], Lines 10-13).

**Regarding claims 17 and 25,** Nakano discloses the optical information recording medium comprises the correction information recording portion further containing, in addition to the correction information, a target recording layer information, for specifying a recording layer in which user data are to be recorded using the laser beam corrected with the correction information and a recording layer specifying information for specifying any of the recording layers arranged closer to the laser beam incident side with respect to the target recording layer, the correction information comprising a plurality of correction coefficients, and a recorded recording layer information recording portion provided in at least one of information recording regions in the first to Nth recording layers contains a recorded recording layer information indicating the recording layer having an information region in which the user data already are recorded, and when recording the information in the Kth recording layer, the target recording layer information corresponding to the Kth recording layer is read out, the correction coefficient, recorded together with the recording layer specifying information corresponding to the recorded recording layer information among the recording layer specifying information recorded together with the read-out target recording layer information is selected from the plurality of correction coefficients, and the pulse condition including the laser beam intensity is determined using the selected correction coefficient ([0056]-[0058]).

**Regarding claims 18 and 26,** Nakano discloses the determining whether the information already is recorded in each of the recording layers arranged on the laser beam incident side with respect to the target recording layer is judged by the recorded

recording-layer information, and the correction coefficient is selected according to the recorded recording layer (optimum power is determined based on first layer's status, [0056]-[0058]).

**Regarding claims 19 and 27,** Nakano discloses the recorded recording layer information comprises a recorded address information for specifying a position of a recorded region, and the recorded address information further is used when selecting the correction coefficient (using stored parameters from recording of track B (neighborhood of track a) for recording of track A, [0060]).

***6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano in view of Song et al. (US 7,054,240).***

**Regarding claim 4,** Nakano does not explicitly disclose but Song does disclose the first to Nth recording layers are provided with guide grooves for tracking of the laser beam, and in the (K + 1)th to Nth recording layers, guide grooves having substantially the same shape as those of the information recording region are provided at the radial position where the test recording region of the Kth recording layer is arranged [Col. 2 Lines 54-64).

Therefore it would have been obvious at the time of the invention to supplement the teachings of Nakano, and have the first to Nth recording layers provided with guide grooves for tracking of the laser beam and in the (K + 1)th to Nth recording layers, guide grooves having substantially the same shape as those of the information recording

region are provided at the radial position where the test recording region of the Kth recording layer is arranged, as disclosed by Song, for tracking control.

***7. Claims 10, 11, and 29 are rejected under35 U.S.C. 103(a) as being unpatentable over Nakano in view of Furukawa et al. (US 2003/0058771), hereinafter Furukawa.***

**Regarding claim 10,** Nakano does not explicitly disclose but Furukawa does disclose the first to Nth recording layers comprise an information recording region for recording user data, at least one of which comprises a recorded recording layer information recording portion containing a recorded recording layer information indicating the recording layer having the information recording region in which the user data already/are recorded ([0104], Lines 1-8; [0105], Lines12-14).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Nakano, and have at least one of the first to Nth recording layers comprise a recorded recording layer information recording portion containing a recorded recording layer information indicating the recording layer having the information recording region in which the user data already are recorded, as disclosed by Furukawa, in order to calculate an optimum recording power for the target recording layer in view of the projected transmittance of the layers preceding it, nearer to the light-incident side of the medium.

**Regarding claim 29,** Nakano discloses the pulse condition includes a laser beam intensity ([0056]-[0058]).

However, Nakano does not disclose but Furukawa does disclose the pulse condition includes a pulse duration and a generation timing and is set according to at least any one of a length or a space of recorded marks ([0097], Lines 9-13; see Table 3; [0102], Lines 1-13).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Nakano, and have the pulse condition include a pulse duration and a generation timing and be set according to at least any one of a length or a space of recorded marks, as disclosed by Furukawa, in order to compensate for fluctuations in transmittance and vary recording parameters accordingly.

**Regarding claim 11;** Nakano discloses the recorded recording layer information comprises a recorded address information for specifying a position of a recorded region (using stored parameters from recording of track B (neighborhood of track a) for recording of track A, [0060]).

***8. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heemskerk et al. (US 2003/0048733) in view of Nakano (US 2002/0136122).***

**Regarding claim 20,** Heemskerk discloses an optical recording and reproducing method for recording information on and reproducing information from an optical information recording medium comprising first to Nth recording, layers (where N is an integer equal to or larger than 2) arranged sequentially from an opposite side of an

incident side of a laser beam, by irradiating the laser beam from one side; the method comprising:

setting in advance an order of the first to Nth recording layers in which user data are recorded ([0007], Lines 10-12);

recording a recorded recording layer information for specifying the recording layer in which the user data already are recorded at a predetermined position in the optical information recording medium ([0007], Lines 4-10);

reading out the recorded recording layer information before recording new user data ([0007], Lines 4-10); and

recording the new user data in the recording layers later than the recording layer corresponding to the recorded recording layer information ([0007]).

Heemskerk fails to disclose while Nakano does disclose determining a pulse condition by a test recording only for the recording layers in the order later than the recording layer corresponding to the recorded recording layer information (Nakano paragraph [0093-[0095]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the test recording taught by Nakano with the recording/reproducing method of Heemskerk. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to control the power of the laser beam such that recording is performed with optimum recording power (Nakano paragraph [0022]).

**Regarding claim 21,** Heemskerk discloses the recorded recording layer information comprises recorded address information for specifying a position of a recorded region ([0007]).

### *Citation of Relevant Prior Art*

***9.*** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Mizuchiet al. (US 7,065,035)** disclose an optical multilayer disk and a method for varying the wavelength of a laser beam according to the target recoding layer.

**Kuribayashi (US 2002/0051414)** discloses a multi-layer information recording medium and apparatus.

**Tobita .et al. (US 5,978,350)** disclose an optical disc including sections for address management information.

### *Conclusion*

***10.*** **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571) 270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LaTanya Bibbins

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PRIMARY EXAMINER AU 2627